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**IN THE UNITED STATE PATENT AND TRADEMARK OFFICE**  
**Before the Board of Patent Appeals and Interferences**

**Applicant:** Michael L. Petroff  
**Serial No.** 10/789,425  
**Filed** February 27, 2004  
**For:** SPEAKER SYSTEMS AND METHODS HAVING AMPLITUDE  
AND FREQUENCY RESPONSE COMPENSATION  
**Art Unit** 2614  
**Examiner** George C. Monikang  
**Confirmation No.** 5685

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**APPEAL BRIEF**

**ON APPEAL FROM GROUP ART UNIT 2614**

**Mail Stop: Appeal Brief - Patents**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**

**May It Please The Honorable Board:**

This Appeal Brief is submitted in support of the Notice of Appeal filed February 08, 2011, and responsive to both the Final Office Action dated November 8, 2010, and the Notification of Non-Compliant Appeal Brief mailed May 18, 2011.

**CERTIFICATE OF MAILING 37 C.F.R. § 1.8(a)**

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*June 10, 2011*  
Date

*Patricia M. Fedorowycz*  
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## **I. REAL PARTY IN INTEREST**

The real party in interest is Thomson Licensing/Technicolor, the owner of 100% interest of assignee of record, PREMIER RETAIL NETWORKS, INC..

## **II. RELATED APPEALS AND INTERFERENCES**

Appellant is not aware of any pending appeals, judicial proceedings, or interferences which may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

## **III. STATUS OF CLAIMS**

The status of the claims in the present application is provided immediately below as follows:

- a) Claims 1-28 are pending in this application.
- b) Claims 1, 7, 12, 18, 22 and 25 are the independent claims.
- c) Claims 1-28 stand rejected in a Final Office Action dated November 8, 2010.
- d) Claims 1-28 are the subject of this appeal

## **IV. STATUS OF AMENDMENTS**

All amendments filed to date in this application have been entered and there are no other claim amendments pending. The claims listed in the Claims Appendix (i.e., Section VIII) of this Appeal Brief correspond to the claims submitted in Appellant's Response to an Office Action which was filed on August 17, 2010. Those claim amendments were reviewed and entered by the Examiner.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

It should be explicitly noted that it is not Appellant's intention that the currently claimed or described embodiments be limited solely to operation within the illustrative embodiments identified below. Furthermore, citations to exemplary descriptions of illustrative embodiments are provided below in association with portions of the claims, which are related to the identified illustrative embodiments, entirely for compliance with, and in satisfaction of, the requirements for filing this

appeal. There is no intention to read any further interpreted limitations into the claims as presented. Moreover, it will be appreciated that additional exemplary descriptions, though not cited herein, may be present in this patent application.

The claimed invention, as recited in claim 1 is directed to a speaker system for providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise (*primarily Figure and Abstract*) comprising: means for receiving the reproduced audio program signal (*Figure 2, element  $P_2$  and page 5, paragraph [00018]*); a microphone for monitoring at least ambient noise signals and for providing a microphone output signal (*Figure 2, element MIC1 and paragraphs [00018] and [00019]*); means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced audio program signal components (*Figure 2, elements D2 and E1 and paragraph [00019]*); and a signal process, in communication with the means for receiving and the means for enabling/disabling, for applying a first transfer function to the reproduced audio program signal, the first transfer function incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled (*Figure 2, element  $P_2$  and  $f_2$ , and paragraphs [00018] and [00019]*).

The claimed invention, as recited in claim 7 is directed to a speaker system for providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise which includes a means for receiving the reproduced audio program signal (*Figure 3 and element  $P_3$  and paragraph [00020]*); a microphone for monitoring ambient noise signals and for providing a microphone output signal (*Figure 3, element MIC1 and paragraph [00020]*); means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal

includes ambient noise signal components without including reproduced program signal components (*Figure 3, elements D2 and E1 and paragraph [00020]*); and a signal processor, in communication with the means for receiving and the means for enabling/disabling for applying a transfer function to the reproduced audio program signal, the transfer function incrementally increasing high frequency response of the reproduced audio program signal as a function of a decreasing amplitude of the microphone output signal averaged over a period of time during which said microphone output signal is enabled, and vice versa, wherein the signal process output signal is maintained during such times as the microphone output signal is disabled (*Figure 3, element P<sub>3</sub> and f<sub>3</sub>, and paragraphs [00020] and [00021]*).

The claimed invention, as recited in claim 12 is directed to a speaker system for providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise which includes a means for receiving the reproduced audio program signal (*Figure 4 and element P<sub>4</sub> and paragraph [00022]*); a microphone for monitoring ambient noise signals and for providing a microphone output signal (*Figure 4, element MIC1 and paragraph [00022]*); means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced program signal components (*Figure 4, elements D2 and E1 and paragraph [00022]*); and a signal processor, in communication with the means for receiving and the means for enabling/disabling, including a first transfer function and a second transfer function having at least one signal processor output signal, wherein the first transfer function provides incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa; the second transfer function provides incrementally increasing high frequency response of the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa; and the at least one signal processor output signal is maintained during such time as the microphone output signal is disabled (*Figure 4, element P<sub>4</sub> and f<sub>2</sub> and f<sub>3</sub>, and paragraphs [00022] and [00023]*).

The claimed invention, as recited in claim 18 is directed to a method for providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise corresponding

to system claim 1; the claimed invention, as recited in claim 22 is directed to a method for providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise corresponding to system claim 7; and the claimed invention, as recited in claim 25 is directed to a method for providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise corresponding to system claim 12.

## **VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

Certain prior art rejections for this application are based on the following references: AAPA, fig. 1; paragraphs [0002-00006], U.S. Patent 6,094,481 to Deville (hereinafter referenced as “Deville”); U.S. Patent 5,526,419 to Allen et al. (hereinafter referenced as “Allen”); U.S. Patent 4,554,533 to Bosnak (hereinafter referenced as “Bosnak”); U.S. Patent 5,588,065 to Tanaka et al. (hereinafter referenced as “Tanaka”).

The grounds of rejection for this application for which review is sought in this appeal are presented below as follows:

1. Whether claims 1-2, 7, 12-13, 18-19, 22 and 25-26 are properly rejected by the USPTO under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Deville and further in view of Allen.
2. Whether claims 3, 5, 8, 10, 14, 16, 20-21, 23-24, and 27-28 are properly rejected by the USPTO under 35 U.S.C. §103(a) as being unpatentable over AAPA, Deville and Allen as applied to claim 1, in view of Bosnak.
3. Whether claims 4, 6, 9, 11, 15 and 17 are properly rejected by the USPTO under 35 U.S.C. §103(a) as being unpatentable over AAPA, Deville, Allen and Bosnak as applied to claim 3, in view of Tanaka.

## VII. ARGUMENT

Appellant respectfully traverses the rejections in accordance with the detailed arguments set forth below.

**1. CLAIMS 1-2, 7, 12-13, 18-19, 22 AND 25-26 ARE IMPROPERLY REJECTED BY THE USPTO UNDER 35 U.S.C. §103(A) AS BEING UNPATENTABLE OVER AAPA IN VIEW OF DEVILLE AND FURTHER IN VIEW OF ALLEN.**

Claims 1-2, 7, 12-13, 18-19, 22 and 25-26 have been rejected under 35 U.S.C. §103. The remarks pertaining to each of these claims will be presented below under their own heading particular to the claim in question.

### **1.A. Independent Claim 1**

Claim 1 is an independent claim that serves ultimately as a base claim for claims 2-6. Claim 1 claims:

*A speaker system providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise, the speaker system comprising:*

*means for receiving the reproduced audio program signal;*

*a microphone for monitoring at least ambient noise signals and for providing a microphone output signal;*

*means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced audio program signal components; and*

*a signal process, in communication with the means for receiving and the means for enabling/disabling, for applying a first transfer function to the reproduced audio program signal, the first transfer function incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled.*

It is respectfully asserted that none of AAPA, Deville, Bosnak, or Tanaka, alone or in combination, disclose, teach or suggest at least:

“a signal process, in communication with the means for receiving and the means for enabling/disabling, for applying a first transfer function to the reproduced audio program signal, the first transfer function incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled,”

as claimed in the Appellant’s claim 1.

As admitted in a previous Office Action dated April 28, 2010, “AAPA fails to disclose incrementally increasing/ decreasing the gain adjustments.” (Office Action, page 4).

Furthermore, as argued in response to the previous Office Action, AAPA does not teach, show, or suggest the claimed limitation of “means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off.” Thus, for at least these reasons, the Appellant submits that the AAPA does not disclose “a signal process, in communication with the means for receiving and the means for enabling/disabling, for applying a first transfer function to the reproduced audio program signal, the first transfer function incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled,” as described in claim 1.

In Deville, a “telephone is disclosed having an automatic gain control circuit and a processor which separates a local signal into a sound signal and a speech signal. The automatic gain control circuit selects a gain value based on sound levels of the sound signal when the speech signal indicates an absence of speech. The telephone also has a variable gain amplifier to



amplify a received signal. The gain of the amplifier is selected from stored gain values which are stored in a memory of the telephone in a table format and are a function of the sound signal and volume levels of the sound signal chosen by a user. An input device of the telephone allows the user to select one of the volume levels.” (Deville Abstract).

Deville does not disclose the averaging over time of a microphone signal during a time that the signal is enabled. Furthermore, Deville discloses the use of a single signal source, namely, the telephone microphone. In contrast, the present invention uses the level of one signal, the microphone, as an input to a function that incrementally increases or decreases the level of a separate signal input. Thus the Appellant submits that, Deville, like AAPA, fails to disclose “a signal process, in communication with the means for receiving and the means for enabling/disabling, for applying a first transfer function to the reproduced audio program signal, the first transfer function incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled,” as described in the Appellant’s claim 1.

Bosnak teaches “the operational status of a remotely controlled electronic siren is periodically tested, from a command post, without producing audible sound. The test procedure includes energizing the voice coils of the siren loudspeakers with a signal outside of the audible range, sensing whether current flows in the speaker voice coil circuits and storing the results of the test. The stored information, upon request, will be transmitted back to the command post.” (Bosnak Abstract).

Tanaka discloses a bass reproduction speaker apparatus, which “includes: a cabinet with an opening, having a division member inside thereof; a speaker unit disposed at the division member; a passive radiator disposed in the opening; an amplifier for driving the speaker unit; a detector for detecting a vibration of a moving system of the speaker unit; and a feedback circuit for feeding back an output signal from the detector to the amplifier.” (Tanaka Abstract)

The Appellant submits that neither Bosnak nor Tanaka disclose, nor does the Office Action assert that they disclose “a signal process, in communication with the means for receiving and the means for enabling/disabling, for applying a first transfer function to the reproduced audio program signal, the first transfer function incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled,” as taught in the Appellant’s Specification and as claimed by at least the Appellant’s claim 1.

As such and for at least the reasons recited above, the Appellant submits that the AAPA in view of Deville, Allen, Bosnak and Tanaka, alone or in any allowable combination, absolutely fail to teach or suggest each and every aspect of the Appellant’s claims.

Therefore, the Appellant submits that for at least the reasons recited above, the Appellant’s claim 1 is not rendered obvious by the teachings of the AAPA in view of Deville, Allen, Bosnak and Tanaka, alone or in any allowable combination. Therefore, the Appellant submits that the Appellant’s claim 1 fully satisfy the requirements of 35 U.S.C. § 103 and is patentable thereunder.

### **1.B. Dependent Claim 2**

Claim 2 depends directly from claim 1. Claim 2 includes all the features of base independent claim 1 including all the particular features discussed immediately above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 1 – which are found above in this section of the brief – for dependent claim 2. Thus, it is submitted that claim 2 is allowable under 35 U.S.C. §103 at least by virtue of its dependence from claim 1 and because claim 2 recites further distinguishing features over the limitations in claim 1. It is respectfully requested the Board reverse the rejection of dependent claim 2.

**1.C. Independent Claim 7**

Claim 7 is an independent claim that serves ultimately as a base claim for claims 8-11.

Claim 7 claims:

*A speaker system providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise, the speaker system comprising:*

*means for receiving the reproduced audio program signal;*

*a microphone for monitoring ambient noise signals and for providing a microphone output signal;*

*means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced program signal components; and*

*a signal processor, in communication with the means for receiving and the means for enabling/disabling for applying a transfer function to the reproduced audio program signal, the transfer function incrementally increasing high frequency response of the reproduced audio program signal as a function of a decreasing amplitude of the microphone output signal averaged over a period of time during which said microphone output signal is enabled, and vice versa, wherein the signal process output signal is maintained during such times as the microphone output signal is disabled.*

At least certain limitations shown above and discussed below from claim 7 are neither taught, nor shown, nor suggested by the teachings of AAPA in view of Deville, Allen, Bosnak and Tanaka.

It can be easily appreciated from a comparison of the claim language for claims 1 and 7 that claim 7 includes limitations similar to the limitations discussed above in claim 1. Since these limitations are similar, the remarks presented above patentably distinguishing claim 1 from AAPA in view of Deville, Allen, Bosnak and Tanaka, may be applied to claim 7.

In view of the remarks above, it is believed that AAPA in view of Deville, Allen, Bosnak and Tanaka fail to teach, show, or suggest all the elements of claim 7. In view of this similarity of the claimed limitations in claims 1 and 7 and the remarks related thereto as presented above, it is submitted that the elements of claim 7 would not have been obvious to a person of ordinary skill in

the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka. Thus, it is submitted that claim 7 is allowable under 35 U.S.C. §103. It is respectfully requested that the Board reverse this rejection of claim 7.

**1.D. Independent Claim 12**

Claim 12 is an independent claim that serves ultimately as a base claim for claims 13-17.

Claim 12 claims:

*A speaker system providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise, the speaker system comprising:*

*means for receiving the reproduced audio program signal;*

*a microphone for monitoring ambient noise signals and for providing a microphone output signal;*

*means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced program signal components; and*

*a signal processor, in communication with the means for receiving and the means for enabling/disabling, including a first transfer function and a second transfer function having at least one signal processor output signal, wherein:*

*the first transfer function provides incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa;*

*the second transfer function provides incrementally increasing high frequency response of the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa; and*

*the at least one signal processor output signal is maintained during such time as the microphone output signal is disabled.*

At least certain limitations shown above and discussed below from claim 12 are neither taught, nor shown, nor suggested by the teachings of AAPA in view of Deville, Allen, Bosnak and Tanaka.

It can be easily appreciated from a comparison of the claim language for claims 1, 7 and 12 that claim 12 includes limitations similar to the limitations discussed above in independent claims 1 and 7. Since these limitations are similar, the remarks presented above patentably distinguishing claims 1 and 7 from the AAPA in view of Deville, Allen, Bosnak and Tanaka, may be applied to claim 12.

In view of the remarks above, it is believed that AAPA in view of Deville, Allen, Bosnak and Tanaka fail to teach, show, or suggest all the elements of claim 12. In view of this similarity of the claimed limitations in claims 1, 7 and 12 and the remarks related thereto as presented above, it is submitted that the elements of claim 12 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka. Thus, it is submitted that claim 12 is allowable under 35 U.S.C. §103. It is respectfully requested that the Board reverse this rejection of claim 12.

#### **1.E. Dependent Claim 13**

Claim 13 depends directly from independent claim 12. Dependent claim 13 includes all the features of base independent claim 12 including all the particular features discussed immediately above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 12 – which are found above in this section of the brief – for dependent claim 13. Thus, it is submitted that claim 13 is allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 12 and because claim 13 recites further distinguishing features over the limitations in claim 12. It is respectfully requested the Board reverse the rejection of dependent claim 13.

#### **1.F. Independent Claim 18**

Claim 18 is an independent claim that serves ultimately as a base claim for claims 19-21. Claim 18 claims:

*A method of enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise in a speaker system comprising:*

*receiving the reproduced audio program signal;*

*monitoring ambient noise signals using a microphone to provide a microphone output signal;*

*enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of the time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced program signal components; and*

*processing the reproduced audio program signal and the microphone output signal using a first transfer function, the first transfer function having a signal process output signal, the first transfer function providing incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled.*

At least certain limitations shown above and discussed below from claim 18 are neither taught, nor shown, nor suggested by the teachings of AAPA in view of Deville, Allen, Bosnak and Tanaka.

It can be easily appreciated from a comparison of the claim language for claims 1 and 18 that claim 18 includes limitations similar to the limitations discussed above in claim 1, albeit a different class of claim. Since these limitations are similar, the remarks presented above patentably distinguishing claim 1 from AAPA in view of Deville, Allen, Bosnak and Tanaka, may be applied to claim 18.

In view of the remarks above, it is believed that AAPA in view of Deville, Allen, Bosnak and Tanaka fail to teach, show, or suggest all the elements of claim 18. In view of this similarity of the claimed limitations in claim 1 and the remarks related thereto as presented above, it is submitted that the elements of claim 18 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka. Thus, it is submitted that claim 18 is allowable under 35 U.S.C. §103. It is respectfully requested that the Board reverse this rejection of claim 18.

**1.G. Dependent Claim 19**

Claim 19 depends directly from independent claim 18. Dependent claim 19 includes all the features of base independent claim 13 including all the particular features discussed immediately above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 18 – which are found above in this section of the brief – for dependent claim 19. Thus, it is submitted that claim 19 is allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 18 and because claim 19 recites further distinguishing features over the limitations in claim 18. It is respectfully requested the Board reverse the rejection of dependent claim 19.

**1.H. Dependent Claim 13**

Claim 13 depends directly from independent claim 12. Dependent claim 13 includes all the features of base independent claim 12 including all the particular features discussed immediately above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 12 – which are found above in this section of the brief – for dependent claim 13. Thus, it is submitted that claim 13 is allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 12 and because claim 13 recites further distinguishing features over the limitations in claim 12. It is respectfully requested the Board reverse the rejection of dependent claim 13.

**1.I. Independent Claim 22**

Claim 22 is an independent claim that serves ultimately as a base claim for claims 23-24. Claim 22 claims:

*A method of enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise in a speaker system, the method comprising:*

*receiving the reproduced audio program signal;*

*monitoring ambient noise signals using a microphone to provide a microphone output signal;*

*enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second*

*increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal without including reproduced program signal components; and*

*processing the reproduced audio program signal and the microphone output signal using a second transfer function, the second transfer function providing incrementally increasing high frequency response of the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa, wherein the signal process output signal is maintained during such times as the microphone output signal is disabled.*

At least certain limitations shown above and discussed below from claim 22 are neither taught, nor shown, nor suggested by the teachings of AAPA in view of Deville, Allen, Bosnak and Tanaka.

It can be easily appreciated from a comparison of the claim language for claims 7 and 22 that claim 22 includes limitations similar to the limitations discussed above in claim 7, albeit a different class of claim. Since these limitations are similar, the remarks presented above patentably distinguishing claim 7 from AAPA in view of Deville, Allen, Bosnak and Tanaka, may be applied to claim 22.

In view of the remarks above, it is believed that AAPA in view of Deville, Allen, Bosnak and Tanaka fail to teach, show, or suggest all the elements of claim 22. In view of this similarity of the claimed limitations in claim 7 and the remarks related thereto as presented above, it is submitted that the elements of claim 22 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka. Thus, it is submitted that claim 22 is allowable under 35 U.S.C. §103. It is respectfully requested that the Board reverse this rejection of claim 22.

### **1.J. Independent Claim 25**

Claim 25 is an independent claim that serves ultimately as a base claim for claims 26-28. Claim 25 claims:

*A method of enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise in a speaker system comprising:*



*receiving the reproduced audio program signal;*

*monitoring ambient noise signals using a microphone to provide a microphone output signal;*

*enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced program signal components; and*

*processing the reproduced audio program signal and the microphone output signal using a first transfer function and a second transfer function, the first and second transfer functions having at least one signal process output signal, wherein:*

*the first transfer function provides incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa;*

*the second transfer function provides incrementally increasing high frequency response of the reproduced audio program signal, and vice versa; and*

*the least one signal process output signal is maintained during such times as the microphone output signal is disabled.*

At least certain limitations shown above and discussed below from claim 25 are neither taught, nor shown, nor suggested by the teachings of AAPA in view of Deville, Allen, Bosnak and Tanaka.

It can be easily appreciated from a comparison of the claim language for claims 12 and 25 that claim 25 includes limitations similar to the limitations discussed above in claim 12, albeit a different class of claim. Since these limitations are similar, the remarks presented above patentably distinguishing claim 12 from AAPA in view of Deville, Allen, Bosnak and Tanaka, may be applied to claim 25.

In view of the remarks above, it is believed that AAPA in view of Deville, Allen, Bosnak and Tanaka fail to teach, show, or suggest all the elements of claim 25. In view of this similarity of the claimed limitations in claim 12 and the remarks related thereto as presented above, it is submitted that the elements of claim 25 would not have been obvious to a person of ordinary skill in the art

upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka. Thus, it is submitted that claim 25 is allowable under 35 U.S.C. §103. It is respectfully requested that the Board reverse this rejection of claim 25.

**1.K. Dependent Claim 26**

Claim 26 depends directly from independent claim 25. Dependent claim 26 includes all the features of base independent claim 25 including all the particular features discussed immediately above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 25 – which are found above in this section of the brief – for dependent claim 26. Thus, it is submitted that claim 26 is allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 25 and because claim 26 recites further distinguishing features over the limitations in claim 25. It is respectfully requested the Board reverse the rejection of dependent claim 26.

**2. CLAIMS 3, 5, 8, 10, 14, 16, 20-21, 23-24, AND 27-28 ARE  
IMPROPERLY REJECTED BY THE USPTO UNDER 35 U.S.C.  
§103(A) AS BEING UNPATENTABLE OVER AAPA, DEVILLE AND  
ALLEN AS APPLIED TO CLAIM 1, IN VIEW OF BOSNAK.**

Claims 7, 18, and 29 have been rejected under 35 U.S.C. §103 as being unpatentable over AAPA, Deville and Allen as applied to claim 1, in view of Bosnak.

As recited above, Bosnak teaches “the operational status of a remotely controlled electronic siren is periodically tested, from a command post, without producing audible sound. The test procedure includes energizing the voice coils of the siren loudspeakers with a signal outside of the audible range, sensing whether current flows in the speaker voice coil circuits and storing the results of the test. The stored information, upon request, will be transmitted back to the command post.” (Bosnak Abstract). The Appellant submits, however, that Bosnak absolutely fails to teach or suggest “a signal process, in communication with the means for receiving and the means for enabling/disabling, for applying a first transfer function to the reproduced audio program signal, the first transfer function incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period

of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled” as taught in the Appellant’s Specification and as claimed by at least independent claim 1 and all other independent claims.

**Dependent Claims 3, and 5**

Claim 3 is directly dependent from claim 1 and claim 5 is directly dependent from claim 3. The base independent claims have been discussed above and they have been patentably distinguished from AAPA in view of Deville, Allen, Bosnak and Tanaka. Remarks concerning the patentability of claim 1 over AAPA in view of Deville, Allen, Bosnak and Tanaka have been presented under heading 1.A in this section of the brief. Those remarks will be understood to be incorporated herein without further repetition, limitation, or modification. Dependent claims 3 and 5 include all the features of base independent claim 1 including all the particular features discussed above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 1 – which are found above in this section of the brief – for dependent claims 3 and 5. Thus, it is submitted that claims 3 and 5 are allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 1 and because claims 3 and 5 recite further distinguishing features over the limitations in claim 1. It is respectfully requested the Board reverse the rejection of dependent claims 3 and 5.

In light of the remarks above, it is believed that the elements of claims 3 and 5 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, either separately or in combination. Thus, it is submitted that claims 3 and 5 are allowable under 35 U.S.C. §103. It is respectfully requested the Board reverse the rejection of dependent claims 3 and 5.

**Dependent Claims 8, and 10**

Claim 8 is directly dependent from independent claim 7 and claim 10 is directly dependent from claim 8. The base independent claims have been discussed above and they have been patentably distinguished from AAPA in view of Deville, Allen, Bosnak and Tanaka. Remarks

concerning the patentability of claim 1 over AAPA in view of Deville, Allen, Bosnak and Tanaka have been presented under heading 1.A in this section of the brief. Those remarks will be understood to be incorporated herein without further repetition, limitation, or modification for all independent claims. Dependent claims 8 and 10 include all the features of base independent claim 7 including all the particular features discussed above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 7 – which are found above in this section of the brief – for dependent claims 8 and 10. Thus, it is submitted that claims 8 and 10 are allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 7 and because claims 8 and 10 recite further distinguishing features over the limitations in claim 7. It is respectfully requested the Board reverse the rejection of dependent claims 8 and 10.

In light of the remarks above, it is believed that the elements of claims 8 and 10 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, either separately or in combination. Thus, it is submitted that claims 8 and 10 are allowable under 35 U.S.C. §103. It is respectfully requested the Board reverse the rejection of dependent claims 8 and 10.

#### **Dependent Claims 14 and 16**

Claim 14 is directly dependent from independent claim 12 and claim 16 is directly dependent from claim 14. The base independent claims have been discussed above and they have been patentably distinguished from AAPA in view of Deville, Allen, Bosnak and Tanaka. Remarks concerning the patentability of claim 1 over AAPA in view of Deville, Allen, Bosnak and Tanaka have been presented under heading 1.A in this section of the brief. Those remarks will be understood to be incorporated herein without further repetition, limitation, or modification for all independent claims. Dependent claims 14 and 16 include all the features of base independent claim 12 including all the particular features discussed above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 12 – which are found above in this section of the brief – for dependent claims 14 and 16. Thus, it is submitted that claims 14 and 16 are allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 12 and because claims 14 and 16 recite further distinguishing features over the limitations in claim 12. It is respectfully requested the Board reverse the rejection of dependent claims 14 and 16.

In light of the remarks above, it is believed that the elements of claims 14 and 16 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, either separately or in combination. Thus, it is submitted that claims 14 and 16 are allowable under 35 U.S.C. §103. It is respectfully requested the Board reverse the rejection of dependent claims 14 and 16.

#### **Dependent Claims 20 and 21**

Claim 20 is directly dependent from independent claim 18 and claim 21 is directly dependent from claim 20. The base independent claims have been discussed above and they have been patentably distinguished from AAPA in view of Deville, Allen, Bosnak and Tanaka. Remarks concerning the patentability of claim 1 over AAPA in view of Deville, Allen, Bosnak and Tanaka have been presented under heading 1.A in this section of the brief. Those remarks will be understood to be incorporated herein without further repetition, limitation, or modification for all independent claims. Dependent claims 20 and 21 include all the features of base independent claim 18 including all the particular features discussed above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 18 – which are found above in this section of the brief – for dependent claims 20 and 21. Thus, it is submitted that claims 20 and 21 are allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 18 and because claims 20 and 21 recite further distinguishing features over the limitations in claim 18. It is respectfully requested the Board reverse the rejection of dependent claims 20 and 21.

In light of the remarks above, it is believed that the elements of claims 20 and 21 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, either separately or in combination. Thus, it is submitted that claims 20 and 21 are allowable under 35 U.S.C. §103. It is respectfully requested the Board reverse the rejection of dependent claims 20 and 21.

#### **Dependent Claims 23 and 24**

Claim 23 is directly dependent from independent claim 22 and claim 24 is directly dependent from claim 23. The base independent claims have been discussed above and they have been patentably distinguished from AAPA in view of Deville, Allen, Bosnak and Tanaka. Remarks

concerning the patentability of claim 1 over AAPA in view of Deville, Allen, Bosnak and Tanaka have been presented under heading 1.A in this section of the brief. Those remarks will be understood to be incorporated herein without further repetition, limitation, or modification for all independent claims. Dependent claims 23 and 24 include all the features of base independent claim 22 including all the particular features discussed above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 22 – which are found above in this section of the brief – for dependent claims 23 and 24. Thus, it is submitted that claims 23 and 24 are allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 22 and because claims 23 and 24 recite further distinguishing features over the limitations in claim 22. It is respectfully requested the Board reverse the rejection of dependent claims 23 and 24. In light of the remarks above, it is believed that the elements of claims 23 and 24 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, either separately or in combination. Thus, it is submitted that claims 23 and 24 are allowable under 35 U.S.C. §103. It is respectfully requested the Board reverse the rejection of dependent claims 23 and 24.

**Dependent Claims 27 and 28**

Claim 27 is directly dependent from independent claim 25 and claim 28 is directly dependent from claim 27. The base independent claims have been discussed above and they have been patentably distinguished from AAPA in view of Deville, Allen, Bosnak and Tanaka. Remarks concerning the patentability of claim 1 over AAPA in view of Deville, Allen, Bosnak and Tanaka have been presented under heading 1.A in this section of the brief. Those remarks will be understood to be incorporated herein without further repetition, limitation, or modification for all independent claims. Dependent claims 27 and 28 include all the features of base independent claim 25 including all the particular features discussed above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claim 25 – which are found above in this section of the brief – for dependent claims 27 and 28. Thus, it is submitted that claims 27 and 28 are allowable under 35 U.S.C. §103 at least by virtue of their dependence from claim 25 and because claims 27 and 28 recite further distinguishing features over the limitations in claim 25. It is respectfully requested the Board reverse the rejection of dependent claims 27 and 28.

In light of the remarks above, it is believed that the elements of claims 27 and 28 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, either separately or in combination. Thus, it is submitted that claims 27 and 28 are allowable under 35 U.S.C. §103. It is respectfully requested the Board reverse the rejection of dependent claims 27 and 28.

**3. CLAIMS 4, 6, 9, 11, 15 AND 17 ARE IMPROPERLY REJECTED BY  
THE USPTO UNDER 35 U.S.C. §103(A) AS BEING  
UNPATENTABLE OVER AAPA, DEVILLE, ALLEN AND BOSNAK  
AS APPLIED TO CLAIM 3, IN VIEW OF TANAKA.**

Claims 4, 6, 9, 11, 15 and 17 have been rejected under 35 U.S.C. §103 as being unpatentable over AAPA, Deville, Allen and Bosnak as applied to claim 3, in view of Tanaka.

As recited above, Tanaka teaches a bass reproduction speaker apparatus, which “includes: a cabinet with an opening, having a division member inside thereof; a speaker unit disposed at the division member; a passive radiator disposed in the opening; an amplifier for driving the speaker unit; a detector for detecting a vibration of a moving system of the speaker unit; and a feedback circuit for feeding back an output signal from the detector to the amplifier.” (Tanaka Abstract). The Appellant submits, however, that Tanaka absolutely fails to teach or suggest “a signal process, in communication with the means for receiving and the means for enabling/disabling, for applying a first transfer function to the reproduced audio program signal, the first transfer function incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled” as taught in the Appellant’s Specification and as claimed by at least claim 1 and all other independent claims.

**Dependent Claims 4 and 6**

Claim 4 is directly dependent from claim 3 and claim 6 is directly dependent from claim 5. The base claims have been discussed above and they have been patentably distinguished from AAPA in view of Deville, Allen, Bosnak and Tanaka. Remarks concerning the patentability of independent

claim 1 and dependent claims 3 and 5 over AAPA in view of Deville, Allen, Bosnak and Tanaka have been presented in this section of the brief. Those remarks will be understood to be incorporated herein without further repetition, limitation, or modification. Dependent claims 4 and 6 include all the features of base independent claim 1 and intervening dependent claims including all the particular features discussed above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claims 1, 3 and 5 – which are found above in this section of the brief – for dependent claims 4 and 6. Thus, it is submitted that claims 4 and 6 are allowable under 35 U.S.C. §103 at least by virtue of their dependence from claims 1, 3 and 5 and because claims 4 and 6 recite further distinguishing features over the limitations in claims 1, 3 and 5. It is respectfully requested the Board reverse the rejection of dependent claims 4 and 6.

In light of the remarks above, it is believed that the elements of claims 4 and 6 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, either separately or in combination. Thus, it is submitted that claims 4 and 6 are allowable under 35 U.S.C. §103. It is respectfully requested the Board reverse the rejection of dependent claims 4 and 6.

#### **Dependent Claims 9 and 11**

Claim 9 is directly dependent from claim 8 and claim 11 is directly dependent from claim 10. The base claims have been discussed above and they have been patentably distinguished from AAPA in view of Deville, Allen, Bosnak and Tanaka. Remarks concerning the patentability of independent claim 7 and dependent claims 8 and 10 over AAPA in view of Deville, Allen, Bosnak and Tanaka have been presented in this section of the brief. Those remarks will be understood to be incorporated herein without further repetition, limitation, or modification. Dependent claims 9 and 11 include all the features of base independent claim 7 and intervening dependent claims including all the particular features discussed above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claims 7, 8 and 10 – which are found above in this section of the brief – for dependent claims 9 and 11. Thus, it is submitted that claims 9 and 11 are allowable under 35 U.S.C. §103 at least by virtue of their dependence from claims 7, 8 and 10 and because claims 9 and 11 recite further distinguishing features over the



limitations in claims 7, 8 and 10. It is respectfully requested the Board reverse the rejection of dependent claims 9 and 11.

In light of the remarks above, it is believed that the elements of claims 9 and 11 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, either separately or in combination. Thus, it is submitted that claims 9 and 11 are allowable under 35 U.S.C. §103. It is respectfully requested the Board reverse the rejection of dependent claims 9 and 11.

**Dependent Claims 15 and 17**

Claim 15 is directly dependent from claim 14 and claim 17 is directly dependent from claim 16. The base claims have been discussed above and they have been patentably distinguished from AAPA in view of Deville, Allen, Bosnak and Tanaka. Remarks concerning the patentability of independent claim 12 and dependent claims 14 and 16 over AAPA in view of Deville, Allen, Bosnak and Tanaka have been presented in this section of the brief. Those remarks will be understood to be incorporated herein without further repetition, limitation, or modification. Dependent claims 15 and 17 include all the features of base independent claim 12 and intervening dependent claims including all the particular features discussed above. In view of this dependence and for the sake of brevity in this brief, Appellant essentially repeats the above arguments from claims 12, 14 and 16 – which are found above in this section of the brief – for dependent claims 15 and 17. Thus, it is submitted that claims 15 and 17 are allowable under 35 U.S.C. §103 at least by virtue of their dependence from claims 12, 14 and 16 and because claims 15 and 17 recite further distinguishing features over the limitations in claims 12, 14 and 16. It is respectfully requested the Board reverse the rejection of dependent claims 9 and 11.

In light of the remarks above, it is believed that the elements of claims 15 and 17 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, either separately or in combination. Thus, it is submitted that claims 15 and 17 are allowable under 35 U.S.C. §103. It is respectfully requested the Board reverse the rejection of dependent claims 15 and 17.

Conclusion

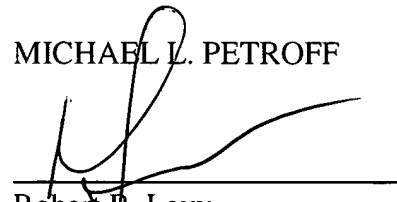
In light of these remarks, it is submitted that claims 1-28 would not have been obvious to a person of ordinary skill in the art upon a reading of AAPA in view of Deville, Allen, Bosnak and Tanaka, whether taken separately or in combination. Therefore, it is believed that claims 1-28 are allowable under 35 U.S.C. §103. It is respectfully requested that the Board of Patent Appeals and Interferences reverse the rejection of claims 1-28.

Since the fee of \$540 was paid with the filing of the previously filed Brief of May 9, 2011, it is believed there is no fee associated with the filing of this Appeal Brief. However, if a fee is due, please charge the fee to Deposit Account No. 07-0832.

Respectfully submitted,

MICHAEL L. PETROFF

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June 10, 2011

## **VIII. CLAIMS APPENDIX**

1. (Previously Presented) A speaker system providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise, the speaker system comprising:

means for receiving the reproduced audio program signal;

a microphone for monitoring at least ambient noise signals and for providing a microphone output signal;

means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced audio program signal components; and

a signal process, in communication with the means for receiving and the means for enabling/disabling, for applying a first transfer function to the reproduced audio program signal, the first transfer function incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled.

2. (Original) The speaker system according to claim 1, wherein the incremental gain adjustments are in steps of between 1 dB and about 10 dB.

3. (Previously Presented) The speaker system according to claim 1, further comprising a first amplifier having an input and an output, the first amplifier input coupled to the output signal of the signal processor and the first amplifier output coupled to an input of a first speaker.

4. (Original) The speaker system according to claim 3, wherein the first speaker comprises a single speaker driver having a diaphragm diameter not greater than about 100 centimeters (cm).

5. (Previously Presented) The speaker system according to claim 3, further comprising:

a low-pass filter having an input and an output, the filter input coupled to the output signal of the signal processor and the filter output augmenting the first speaker output in a low frequency region; and

a second amplifier having an input and output, the second amplifier input coupled to the filter output and the second amplifier output coupled to an input of a second speaker.

6. (Original) The speaker system according to claim 5, wherein the first and second speakers each comprise a single speaker driver having a diaphragm diameter not greater than about 100 centimeters (cm).

7. (Previously Presented) A speaker system providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise, the speaker system comprising:

means for receiving the reproduced audio program signal;

a microphone for monitoring ambient noise signals and for providing a microphone output signal;

means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced program signal components; and

a signal processor, in communication with the means for receiving and the means for enabling/disabling for applying a transfer function to the reproduced audio program signal, the transfer function incrementally increasing high frequency response of the reproduced audio program signal as a function of a decreasing amplitude of the microphone output signal averaged over a period of time during which said microphone output signal is enabled, and vice versa, wherein the signal process output signal is maintained during such times as the microphone output signal is disabled.

8. (Previously Presented) The speaker system according to claim 7, further comprising a first amplifier having an input and an output, the first amplifier input coupled to the output signal of the signal processor and the first amplifier output coupled to an input of a first speaker.

9. (Original) The speaker system according to claim 8, wherein the first speaker comprises a single speaker driver having a diaphragm diameter not greater than about 100 centimeters (cm).

10. (Previously Presented) The speaker system according to claim 8, further comprising:

a low-pass filter having an input and an output, the filter input coupled to the output signal of the signal processor and the filter output augmenting the first speaker output in a low frequency region; and

a second amplifier having an input and output, the second amplifier input coupled to the filter output and the second amplifier output coupled to a second speaker.

11. (Original) The speaker system according to claim 10, wherein the first and second speakers each comprise a single speaker driver having a diaphragm diameter not greater than about 100 centimeters (cm).

12. (Previously Presented) A speaker system providing enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise, the speaker system comprising:

means for receiving the reproduced audio program signal;

a microphone for monitoring ambient noise signals and for providing a microphone output signal;

means for enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced program signal components; and

a signal processor, in communication with the means for receiving and the means for enabling/disabling, including a first transfer function and a second transfer function having at

least one signal processor output signal, wherein:

the first transfer function provides incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa;

the second transfer function provides incrementally increasing high frequency response of the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa; and

the at least one signal processor output signal is maintained during such time as the microphone output signal is disabled.

13. (Original) The speaker system according to claim 12, wherein the incremental gain adjustments are in steps of between about 1 dB and about 10 dB.

14. (Previously Presented) The speaker system according to claim 12, further comprising a first amplifier having an input and an output, the first amplifier input coupled to the at least one output signal of the signal processor and the first amplifier output coupled to a first speaker.

15. (Original) The speaker system according to claim 14, wherein the first speaker comprises a single speaker driver having a diaphragm diameter not greater than about 100 centimeters (cm).

16. (Previously Presented) The speaker system according to claim 14, further comprising:

a low-pass filter having an input and an output, the filter input coupled to the at least one output signal of the signal processor and the filter output augmenting the first speaker output in a low frequency region; and

a second amplifier having an input and output, the second amplifier input coupled to the filter output and the second amplifier output coupled to a second speaker input of a second speaker.

17. (Original) The speaker system according to claim 16, wherein the first and second speakers each comprise a single speaker driver having a diaphragm diameter not greater than about 100 centimeters (cm).

18. (Previously Presented) A method of enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise in a speaker system comprising:

receiving the reproduced audio program signal;

monitoring ambient noise signals using a microphone to provide a microphone output signal;

enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of the time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced program signal components; and

processing the reproduced audio program signal and the microphone output signal using a first transfer function, the first transfer function having a signal process output signal, the first transfer function providing incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and incrementally decreasing gain adjustments to the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled.

19. (Original) The method according to claim 18, wherein the incremental gain adjustments are in steps of between about 1 dB and about 10 dB.

20. (Previously Presented) The method according to claim 18; further comprising:

amplifying the signal process output signal using a first amplifier to produce a first amplified output signal; and

coupling the first amplified output signal to a first speaker input of a first speaker.

21. (Previously Presented) The method according to claim 20, further comprising:
- filtering the signal process output signal using a low-pass filter to produce a filtered output signal;
  - amplifying the filtered output signal using a second amplifier to reproduce a second amplified output signal; and
  - coupling the second amplified output signal to an input of a second speaker.
22. (Previously Presented) A method of enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise in a speaker system, the method comprising:
- receiving the reproduced audio program signal;
  - monitoring ambient noise signals using a microphone to provide a microphone output signal;
  - enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal without including reproduced program signal components; and
  - processing the reproduced audio program signal and the microphone output signal using a second transfer function, the second transfer function providing incrementally increasing high frequency response of the reproduced audio program signal as a function of a decreasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa, wherein the signal process output signal is maintained during such times as the microphone output signal is disabled.
23. (Previously Presented) The method according to claim 22, further comprising:
- amplifying the signal process output signal using a first amplifier to produce a first amplified output signal; and
  - coupling the first amplified output signal to a first speaker input of a first speaker.



24. (Previously Presented) The method according to claim 23, further comprising:

filtering the signal process output signal using a low-pass filter to produce a filtered output signal;

amplifying the filtered output signal using a second amplifier to produce a second amplified output signal; and

coupling the second amplified output signal to an input of a second speaker.

25. (Previously Presented) A method of enhanced intelligibility of a reproduced audio program signal in the presence of ambient noise in a speaker system comprising:

receiving the reproduced audio program signal;

monitoring ambient noise signals using a microphone to provide a microphone output signal;

enabling the microphone output signal during first increments of time when the reproduced audio program signal is substantially off, and disabling the microphone output signal during second increments of time when the reproduced audio program signal is on, such that the microphone output signal includes ambient noise signal components without including reproduced program signal components; and

processing the reproduced audio program signal and the microphone output signal using a first transfer function and a second transfer function, the first and second transfer functions having at least one signal process output signal, wherein:

the first transfer function provides incrementally increasing gain adjustments to the reproduced audio program signal as a function of an increasing average amplitude of the microphone output signal over a period of time during which said microphone output signal is enabled, and vice versa;

the second transfer function provides incrementally increasing high frequency response of the reproduced audio program signal, and vice versa; and

the least one signal process output signal is maintained during such times as the microphone output signal is disabled.

26. (Original) The method according to claim 25, wherein the incremental gain adjustments are in steps of between about 1 dB and about 10 dB.

27. (Previously Presented) The method according to claim 25, further comprising:  
    amplifying the at least one signal; and  
    coupling the first amplified output signal to a first speaker input of a first speaker.

28. (Previously Presented) The method according to claim 27, further comprising:  
    filtering the at least one signal process output signal using a low-pass filter to produce a filtered output signal;  
    amplifying the filtered output signal using a second amplifier to produce a second amplified output signal; and  
    coupling the second amplified output signal to a second speaker input of a second speaker.

**IX. EVIDENCE APPENDIX**

No evidence has been submitted pursuant to §§ **1.130**, **1.131**, or **1.132** of this title. No other evidence has been entered by the Examiner and/or relied upon by Appellant in this appeal, at this time.

**Customer No.: 24498**  
**Serial No.: 10/789,425**

**PATENT**  
**PRN06012**

**X. RELATED PROCEEDINGS APPENDIX**

Appellant is not aware of any appeals or interferences related to the present application.